

Ocean Literacy Principle #1

The Earth has one big ocean with many features.



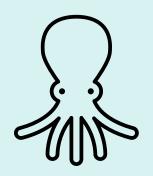
Photo Credit: NASA

Science Facts

Throughout the ocean, there is one interconnected circulation system powered by wind, tides, the force of the Earth's rotation (Coriolis effect), the Sun, and water density differences. The shape of ocean basins and adjacent land masses influence the path of circulation. This "global ocean conveyor belt" moves water throughout all of the ocean's basins, transporting energy (heat), matter, and organisms around the ocean. Changes in ocean circulation have a large impact on the climate and cause changes in ecosystems.



Imagine you are a drop of water moving through the ocean. Can you tell the story of your journey around the planet and describe some of the things you might see along the way?



Ocean Literacy Principle #2

The ocean and life in the ocean shape the features of Earth.

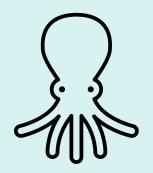


Photo Credit: American Geosciences Institute

Science Facts

Tectonic activity, sea level changes, and force of waves influence the physical structure and landforms of the coast.





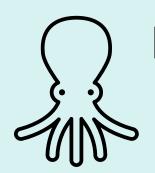
Try This: Several million years ago, about half of South Carolina was covered by the ocean. On this map, the black line represents South Carolina's ancient coastline. All areas to the right of the line were once under water!



Photo Credit: SCDNR

Find your hometown on the map and describe what your neighborhood might have looked like at that time. Include both living and nonliving features of the environment.





Ocean Literacy Principle #3

The ocean is a major influence on weather and climate.

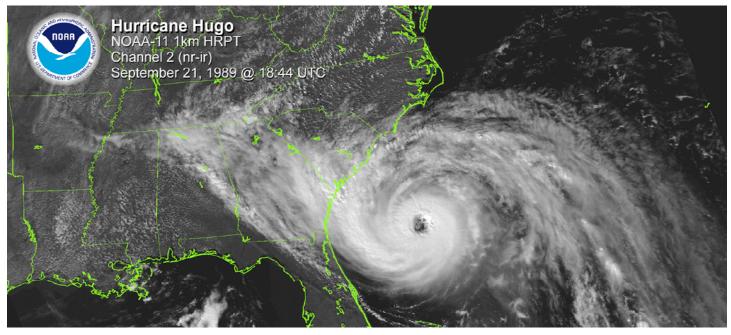
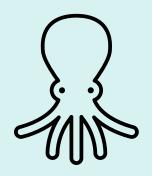


Photo Credit: weather.gov

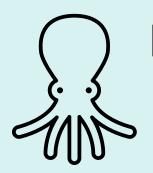
Science Facts

Condensation of water that evaporated from warm seas provides the energy for hurricanes and cyclones. Most rain that falls on land originally evaporated from the tropical ocean.





Write a short story about how a hurricane might affect a family living on South Carolina's coast.						



Ocean Literacy Principle #4

The ocean made Earth habitable.

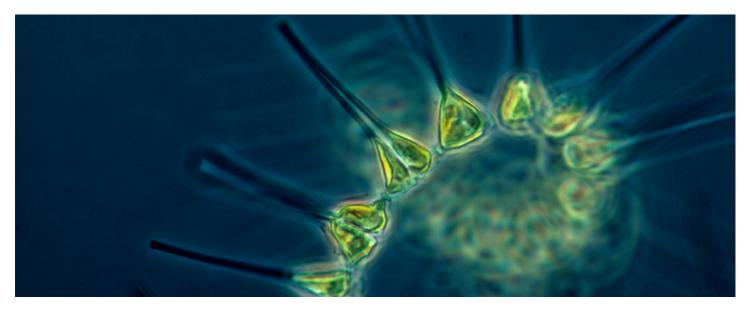
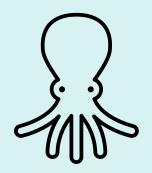


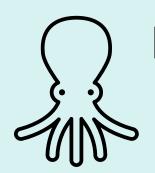
Photo Credit: NOAA

Science Facts

The first life is thought to have started in the ocean. The earliest evidence of life is found in the ocean.



What do you think the first living things on Earth might have looked ike? Draw a picture of your living thing and explain how this organism adapted to survive in its environment.						



Ocean Literacy Principle #5

The ocean supports a great diversity of life and ecosystems.

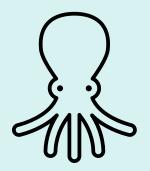


Photo Credit: NOAA Fisheries

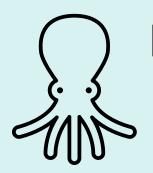
Science Facts

Ocean life ranges in size from the smallest living things, microbes, to the largest animals that have lived on Earth, blue whales.





Choose either a very large or a very small ocean organism and write a story about a day in its life.						
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Ocean Literacy Principle #5

The ocean supports a great diversity of life and ecosystems.

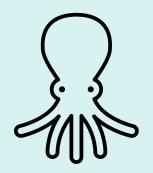


Photo Credit: E.V. Bell

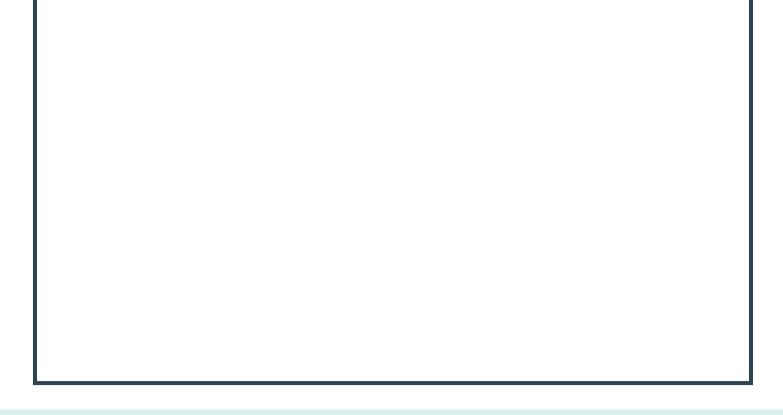
Science Facts

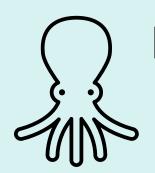
Estuaries provide important and productive nursery areas for many marine and aquatic species.





Salt marshes are one of the most productive ecosystems on the
planet, meaning that they are very good at using the energy from
the sun to make energy (food) for living things on Earth. Do you
think a very productive habitat would have more or less living things
than a habitat that is not very productive? Explain your reasoning.





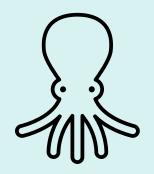
Ocean Literacy Principle #6

The ocean and humans are inextricably interconnected.

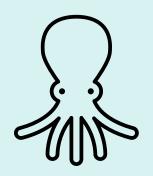


Photo Credit: NOAA

Background Info: Everyone is responsible for caring for the ocean. The ocean sustains life on Earth, and humans must live in ways that sustain the ocean. Individual and collective actions are needed to effectively manage ocean resources for all.



Describe some of the impacts people can have on the ocean. Be sure to include both positive and negative ways that people can influence the sea!



Ocean Literacy Principle #6

The ocean and humans are inextricably interconnected.



Photo Credit: U.S. Department of Transportation

Background Info: Much of the world's population lives in coastal areas. Coastal regions are susceptible to natural hazards (tsunamis, hurricanes, cyclones, sea level change, and storm surges).



Many early human civilizations chose to settle along the coast. What do you think drew them to these areas?					



Ocean Literacy Principle #7

The ocean is largely unexplored.

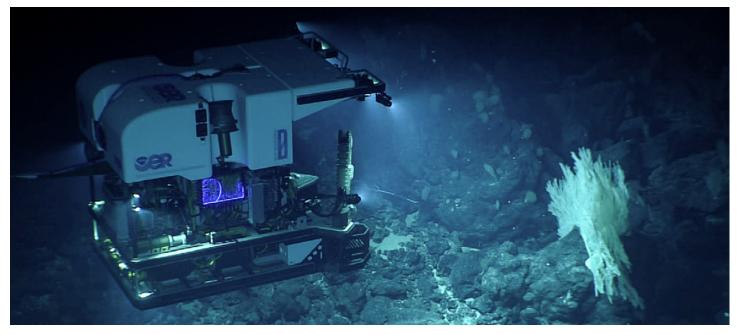
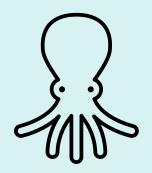


Photo Credit: NOAA

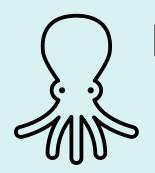
Background Info

New technologies, sensors, and tools are expanding our ability to explore the ocean system. Scientists are relying more and more on satellites, drifters, buoys, subsea observatories, remotely operated vehicles, and manned submersibles.





Imagine you are a scientist who wants to design a machine to study the deep sea. What are some things that would make this difficult?
What could you learn about in the deep ocean? Draw your best submersible design!



Ocean Literacy Principle #7

The ocean is largely unexplored.



Photo Credit: The Ocean Cleanup

Background Info: Ocean exploration is truly interdisciplinary. It requires close collaboration among biologists, chemists, climatologists, computer programmers, engineers, geologists, meteorologists, physicists, animators, and illustrators. These interactions foster new ideas and new perspectives for inquiries.



would you like to do and why? All kinds of jobs are needed to make ocean exploration possible - scientists, engineers, artists, businesspeople, and countless others!					